



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 7

11201 Renner Boulevard
Lenexa, Kansas 66219

NOV 28 2016

MEMORANDUM

SUBJECT: Quality Assurance Project Plan for RCRA at Recycletronics (Sioux City, Iowa) and Lin-Du LLC (South Sioux City, Iowa) – Approved with Condition

FROM: *Diane Harris*
Diane Harris, Regional Quality Assurance Manager
Environmental Sciences and Technology Division

TO: Rebecca Wenner, RCRA QAPP Co-Coordinator
Air and Waste Management Division

The review of the subject document prepared by the Air and Waste Management Division and dated November 2016, has been completed according to the “EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations,” EPA QA/R-5 March 2001.

Based on the comments below, the document is approved with conditions. The document was found to be incomplete in addressing some key areas to the extent of potentially jeopardizing the quality of the data. These areas are fully described in this review memorandum as critical comments, and can be adequately addressed by incorporation into the document without resubmission. The document would not be approved without addressing these issues. General comments identify opportunities for strengthening the document, but do not affect approval.

Critical Comments

1. § B2.1, Sampling: This section addresses sediment samples, and refers to them being collected as discussed in § B1. However, § B1 only addresses waste streams in drums/containers, waste stream spills/piles, and surface soil. Sediment sampling needs to be clarified.

General Comments

2. § A7.1.1, Precision and Accuracy: Please note that RPDs are typically calculated for field duplicates and %RSD for field replicates. See also § B5.
3. § A9, Documentation and Records: It appears that a separate field narrative will not be prepared, but that all details will be provided in the sampling inspection report. Is this correct?
4. § B2.1, Sampling: Please note that SOP 2231.2009 should be 4231.2009, as noted in the list of SOPs on the previous page.

RCRA



561329



Printed on Recycled Paper

5. § B5, Quality Control Requirements:

- a. This section refers to liquid waste and water, but because these matrices are not addressed in § B1, this is assumed to either be a “cut and paste” error or a general reference to help illustrate the frequency of duplicate samples.
- b. This section addresses field (preservative) blanks; however, § A7.1.1 states no preservatives will be used for the samples and so no preservative blanks will be collected. It is assumed the mention of field (preservative) blanks in § B5 is a “cut and paste” or copying error. See also § D2.

6. § B10, Data Management: Except for the sampling inspection report, it appears there is no additional data handling equipment and procedures that will be used to process, compile, and analyze data (e.g., spreadsheets, databases, or other software/hardware requirements). Is this correct?

7. § C2, Reports to Management: Who will receive the sampling inspection report described here?

8. § D1, Data Review, Validation, and Verification Requirements: Please note the method SOPs and 2410.10 will also be followed by the Regional Laboratory for data review.

9. § D3, Reconciliation with User Requirements: It appears there will be no additional statistical analyses of the data beyond the calculation of completeness and %RSD for field duplicates. Is this correct?

10. Appendix D, Sample Summary Table for Facilities A, B, and C:

- a. Please note the Regional Laboratory performs method 7473 for mercury rather than 7471.
- b. It would be useful to also refer to the Regional Laboratory method SOPs for the base methods listed in Appendix D as follows:
 - i. 6010 is SOP 3122.03
 - ii. 7473 is SOP 3121.23
 - iii. 1311 is SOP 3171.01

If you have any questions, please contact me at x7258.

R7QAO Document Number: 2017040

**Quality Assurance Project Plan
for
RCRA Compliance Sampling
at**

**Recycletronics
3313 Northbrook Drive
Sioux City, IA 51105**

And

**Lin-Du LLC
2301 G Street
South Sioux City, NE**

And

**Recycletronics
1230 Steuben Street
Sioux City, Iowa**

Prepared by
Rebecca Wenner
November 2016

Rebecca Wenner, RCRA QAPP Co-Coordinator

Date

Michael J. Martin, RCRA QAPP Co-Coordinator

Date

Mary Goetz, EPA AWMD/WEMM Branch Chief

Date

Diane Harris, Regional Quality Assurance Manager
Data Integrations and Support Operations Branch

Date

A3.	DISTRIBUTION LIST	3
A4.	PROJECT/TASK ORGANIZATION.....	3
A5.	PROBLEM DEFINITION/BACKGROUND.....	4
A6.	PROJECT/TASK DESCRIPTION	5
A7.	DATA QUALITY OBJECTIVES AND CRITERIA FOR MEASUREMENT DATA.....	7
A7.1	Data Quality Indicators.....	7
A7.1.1.	Precision and Accuracy.....	7
A7.1.2.	Representativeness.....	8
A7.1.3.	Completeness.....	8
A7.1.4.	Comparability	8
A8.	SPECIAL TRAINING REQUIREMENTS/CERTIFICATION	8
A8.1	Personnel.....	8
A9.	DOCUMENTATION AND RECORDS	9
B1.	SAMPLING PROCESS DESIGN	9
B1.1	Health and Safety	9
B1.2	Samples	10
B1.2.1	Waste Streams in Drums and/or other open containers	10
B1.2.2	Solid Waste Stream Spills and Piles.....	10
B1.2.3	Soil.....	10
B1.2.4	Background Soil.....	11
B1.3.	Waste Generated During Sampling.....	11
B1.4.	Additional Design Information	11
B2.	SAMPLING METHODS REQUIREMENTS.....	11
B2.1.	Sampling.....	12
B2.2.	Additional Requirements.....	12
B3.	SAMPLE HANDLING AND CUSTODY REQUIREMENTS.....	13
B4.	ANALYTICAL METHODS REQUIREMENTS	13
B5.	QUALITY CONTROL REQUIREMENTS.....	13
B6.	INSTRUMENT/EQUIPMENT TESTING, INSPECTION, AND MAINTENANCE REQUIREMENTS.....	14
B7.	INSTRUMENT CALIBRATION AND FREQUENCY.....	14
B8.	INSPECTION/ACCEPTANCE REQUIREMENTS FOR SUPPLIES AND CONSUMABLES.....	14
B9.	DATA ACQUISITION REQUIREMENTS FOR NON-DIRECT MEASUREMENTS.....	14
B10.	DATA MANAGEMENT	14
C1.	ASSESSMENTS AND RESPONSE ACTIONS.....	14
C2.	REPORTS TO MANAGEMENT.....	15
D1.	DATA REVIEW, VALIDATION, AND VERIFICATION REQUIREMENTS	15
D2.	DATA VALIDATION AND VERIFICATION METHODS	15
D3.	RECONCILIATION WITH USER REQUIREMENTS	15

Appendix A - Organization Chart

Appendix B - Facility Layout

Appendix C - Equipment List

Appendix D - Sample Summary Table

Appendix E - Site Safety Check Off List

A3. DISTRIBUTION LIST

EPA Region VII: Michael J. Martin, RCRA Inspector
Rebecca Wenner, AWMD/WEMM Compliance Officer
Mary Goetz, AWMD/WEMM Branch Chief
Jeff Field, ENST/EFCB Chief
Diane Harris, Regional Quality Assurance Manager
Margie St. Germain, Regional Laboratory Branch Chief

A4. PROJECT/TASK ORGANIZATION

This Resource Conservation and Recovery Act (RCRA) sampling project will be conducted by US Environmental Protection Agency (EPA) Region 7 (R7) for the RCRA compliance program. EPA will be responsible for all activities. The Project Organizational Chart is included as Appendix A. The individuals directly involved with this sampling project and their specific responsibilities are outlined below.

Michael J. Martin, RCRA Inspector and AWMD/WEMM Compliance Officer will serve as project manager for this sampling project. As project manager, the inspector will direct, coordinate, and implement the field sampling activities/operations, except select sampling locations. In addition, the project manager will review, document and ensure that the sampling activity is conducted in accordance with this QAPP. The project manager will be responsible for providing the Environmental Sciences and Technology Division (ENST) the site-specific Analytical Services Request (ASR) form. The project manager will ensure QAPP implementation and document any deviations from this QAPP. The project manager will also participate in the sample collection process, with the additional assistance of one or more Environmental Field Compliance Branch (EFCB) Inspectors and/or Air and Waste Management Division/Waste Enforcement and Materials Management Branch (AWMD/WEMM) Compliance Officers. These individuals will be designated as project assistants. He is responsible for review of this QAPP and to ensure that it meets the needs of the RCRA Compliance Program. The project manager will inform EFCB personnel of changed project data needs.

Rebecca Wenner, RCRA Inspector and AWMD/WEMM Compliance Officer, or her designee, will serve as co-project manager for this sampling project. She is responsible for authoring and revising this QAPP. She will select all locations where program specific samples are to be collected during this field activity and take all Photos. She is also responsible for providing available site specific information prior to this sampling project, and for informing the ENST/EFCB Manager and/or the project manager of any changed project data needs.

Mary Goetz, EPA WEMM Branch Chief, or her designee, is responsible for the overall coordination and decisions for the sampling project and for assigning project managers/assistants. She will be responsible for overall targeting and scheduling of this facility inspection covered by this QAPP. Assigns the WEMM Compliance Officer to this facility that is scheduled for the inspection. Will also review this QAPP to ensure that it meets the data needs of WEMM compliance program. Also, responsible for providing available site specific information prior to this sampling project, and for informing the ENST/EFCB Manager and/or project manager of any changed project data needs.

Diane Harris, EPA Regional Quality Assurance Manager is responsible for the review and approval of this QAPP and any subsequent revisions in terms of quality assurance aspects.

Margie St. Germain, EPA Regional Laboratory Branch Chief is responsible for the coordination and scheduling of lab analyses, data review and data validation.

A5. PROBLEM DEFINITION/BACKGROUND

According to the May 23, 2016 Compliance Evaluation Inspection (CEI) report:

Recycletronics was originally organized as a not-for-profit in 1990 as Disabled Veterans at Work. It was reorganized in 2011 as a for-profit corporation and moved into the present facility in 2013. Recycletronics collects used electronic equipment (computer monitors, computers, printers, and televisions) from landfills, and by staging recycling events in various cities. Homeowners and businesses can drop off their used electronic equipment for recycling at these events. The used electronic equipment is then disassembled by Recycletronics and the components [wiring, circuit boards, cathode ray tubes (CRT), monitors, and cases] are sorted for recycling. Recycletronics processes CRTs for recycling by separating leaded glass from other components, this is done by taking CRTs to the glass room to separate into leaded and unleaded glass debris. All other electronic equipment is bundled on pallets and sold as-is to brokers for reuse or recycling.

Recycletronics is located at 3313 Northbrook Drive, Sioux City, Iowa, in Woodbury County (Facility A). A satellite facility of Recycletronics, referred to as Lin-Du LLC (Lin-Du), is located at 2301 G Street, South Sioux City, Nebraska (Facility B). The Iowa Department of Natural Resources (IDNR) told EPA that in August, 2016, Recycletronics may have moved some or all of their operations to a third location, 1230 Steuben Street, Sioux City, Iowa (Facility C).

The first Compliance Evaluation Inspection (CEI) conducted by EPA and/or an EPA contractor at Facility A on June 16, 2015. A subsequent CEI was conducted on May 23, 2016. On April 17, 2016 and May 23, 2016, an EPA contractor conducted CEIs at both Facility A and Facility B. To date, no CEI has been conducted at Facility C. During each CEI, facility representatives have claimed that computer problems prevented them from producing any files or records. During the CEIs, inspectors documented large piles of glass on the ground at Facility B, and multiple containers of glass in poor condition at both Facility A and Facility B. An inspector also identified multiple containers of broken electronic equipment in poor condition, stored outdoors on the ground.

A Request for Information under the authority of Section 3007 of RCRA was received by the owner of Recycletronics on February 22, 2016. To date, no response has been received by EPA.

As a result of the CEIs, EPA has found that the facility is in violation of the following:

1. Title 40 Code of Federal Regulations (40 CFR) 262.34(a)(4) referencing 40 CFR 265.31
 - Failure to manage a facility to minimize the possibility of a release.
 - a. (Cited in the December 1, 2015 EPA LOW) – Facility A - During the July 16, 2015 CEI, the inspector observed containers of electronic equipment awaiting processing stored outdoors (Photos 7 to 14).

These containers were open, had the contents overflowing the containers, and many of the containers were in poor condition and were not weather proof. Around these containers the inspector observed broken plastic and metal scrap on the concrete pad and on the unpaved ground (Photos 15 to 18).

- b. (Not yet cited) – Facility B - During the April 17, 2016 CEI, the inspector observed a large pile of crushed glass on the concrete pad (Photos 1 to 6). Some of the glass was in open totes, the remainder was open and sitting directly on the concrete pad. The inspector also observed that the north and east sides of pile were in standing water (Photos 7 to 13).
2. Title 40 CFR 261.39(b)(2)(i), Failure to receive broken or intact CRTs and to manage glass removed from CRT monitors within a building with a roof, floor, and walls.
 - a. Facility A - At the time of the July 16, 2015, and the May 23, 2016, inspections, containers of electronic equipment had been received and were awaiting processing, were being stored outdoors (Photos 7 to 14). These containers were open, had the contents overflowing the containers, and many of the containers were in poor condition and were not weather proof.
 - b. Facility B - During the April 17, 2016, and May 23, 2016, inspections, the EPA inspector observed a large pile of crushed glass removed from CRTs were stored outdoors, on a concrete pad (Photos 1 to 6). Some of the glass was in open totes, the remainder was open and sitting directly on the concrete pad. The inspector also observed that the north and east sides of pile were in standing water (Photos 7 to 13).

Additional violations may be cited if the facility is found to be speculatively accumulating hazardous materials.

Sampling is necessary to determine if the glass piles, soil, and other wastes at the three sites contain hazardous constituents, including whether or not the glass is leaded glass. The primary constituents of concern at all three sites is heavy metals, primarily lead, cadmium, chromium, and mercury.

A6. PROJECT/TASK DESCRIPTION

The purpose of this sampling project is to determine whether (1) the facility is in compliance with RCRA regulations, (2) the facility is not in compliance with RCRA, which will require compliance/enforcement response to return the facility to compliance, or (3) the facility must further monitor and analyze its waste streams, waste management units, soils, sediment, and/or storm/surface water. This will involve the following activities:

- EPA conducting current site assessments by completing RCRA compliance evaluation inspections; and
- EPA determining waste inventory on-site and sampling suspected hazardous waste for verification of non-hazardous waste determinations.

To make these determinations, EPA will compare the resulting sampling data to the applicable regulatory levels to identify the presence and not the extent of the hazardous constituents of concern.

Waste and environmental samples will be collected at the facility. Media sampled may include solid wastes, soils, and/or sediment.

Solid waste samples will be collected to determine the accuracy of the facility's waste determinations and if hazardous constituents are being managed in compliance with RCRA regulations. These selected areas will be as stated in Section B1.2. Waste samples may be comprised of any exposed (i.e., open to the elements and/or accessible to humans) electronic wastes and/or electronic waste components that are accumulated in drums, boxes, and/or other containers, or in piles and/or spilled onto the ground. Typical analyses expected will include the following:

- Total metals (including mercury) – The total metals analytical data will be used to determine if metals are present in the waste and/or media. This will include being used to identify the presence and not the extent of the hazardous constituents of concern. Therefore, there will be no action levels, although any detection of these constituents will be used to make these determinations.
- TCLP metals – In the event that any of the analytical results for the total analyses exceed the regulatory threshold by a factor of 20, these samples will be analyzed for TCLP metals. The TCLP results will be compared to the RCRA TCLP regulatory levels found in Table 1 of 40 CFR 261 Subpart C. Any waste exceeding a regulatory threshold will be classified as a hazardous waste.

Soil and sediment samples will be collected from selected waste/spill areas. This sampling will be conducted to determine if any hazardous constituents and/or pollutants have been released on-site, and to determine if the soil itself has been contaminated to such a level that it requires management as a hazardous waste. These selected areas will be as stated in Section B1.2. Typical analyses expected will include the following:

- Total metals (including mercury) – The total metals analytical data will be used to determine if metals are present in the soil and/or sediment. This will include being used to identify the presence and not the extent of the hazardous constituents of concern. It will be compared to any available soil background sample data as explained in Section A7.
- TCLP metals – In the event that any of the analytical results for the total analyses exceed the regulatory threshold by a factor of 20, these samples will be analyzed for TCLP metals. The TCLP results will be compared to the RCRA TCLP regulatory levels found in Table 1 of 40 CFR 261 Subpart C. Any waste exceeding a regulatory threshold will be classified as a hazardous waste.

The background soil samples will be collected from a nearby unaffected area (such as a non-adjacent public park) and analyzed for total metals.

This sampling project is scheduled to begin during the first quarter (preferably beginning of December) of FY2017. All samples will be delivered to the EPA laboratory upon return from the sampling project. EPA R7 SOP No. 2334.21 "Shipping Ambient and NPDES Water Samples to the EPA Region 7 Laboratory" will be followed where applicable.

A complete equipment list is provided as Appendix C. Appendix D indicates the sample containers required during this project. Personnel requirements are listed in Section A8 of this QAPP.

A7. DATA QUALITY OBJECTIVES AND CRITERIA FOR MEASUREMENT DATA

The project data quality objective is to provide valid data of known and acceptable quality for the wastes, soils, and sediment. Analytical data will be compared to background and regulatory levels as specified below:

- TCLP constituents will be compared to regulatory thresholds – Any sample analysis that exceeds the regulatory level is classified as a hazardous waste.
- Total metals data will be used to identify the presence and not the extent of the hazardous constituents of concern or pollutants.
- Soil sample data will be compared against the background sample data. A release of contaminants (with the exception of metals) to the soil will be deemed to have occurred if the sample concentration level exceeds background, assuming reasonable background levels. A release of metal contaminants to the soil will be deemed to have occurred if the sample concentration level exceeds a background concentration level by more than a factor of two, assuming reasonable background levels.

A7.1 Data Quality Indicators

A sample summary table which includes the location and type of each sample, sample matrix, estimated number of samples, container type, preservation method, constituents of interest, analytical method, and level of interest is included as Appendix D. The data quality indicators to be measured are identified below.

A7.1.1 Precision and Accuracy

The goals for analytical precision and accuracy are described in R7 ENST Standard Operating Procedures (SOP) and specified in the analytical methods. If a contract laboratory is utilized, the contracted laboratory shall meet or exceed the goals for analytical precision and accuracy described in R7 ENST SOPs and the approved analytical methods.

Duplicate sample data will be utilized to assess precision. The acceptance limit for the precision assessed via field duplicate samples will be less than or equal to 50 percent relative standard deviation.

No trip blank or preservative blanks will be utilized during this project as volatiles are not of interest at this site and preservatives will not be used because all samples will be solids.

Dedicated sampling equipment will be used where all possible. If decontamination is conducted of applicable sampling equipment, then a rinsate blank will be collected to assess decontamination procedures. The rinsate data will be compared to the sample data. If any constituents are detected, then the sampling data will be further investigated and the actions taken will be documented in the inspection report.

A7.1.2 Representativeness

Representativeness will not be an issue during the waste sampling as worst-case conditions are being determined, these worst-case conditions being that portions of the waste stream sampled would be a hazardous waste. Therefore, samples will be collected based on the inspectors' criteria from visually contaminated areas or areas most likely to contain the hazardous constituents of concern.

Representativeness will also not be an issue during the soil and sediment sampling as the data will be used to identify the presence and not the extent of the hazardous constituents of concern or pollutants. Therefore, samples will be collected based on the inspectors' criteria from visually contaminated areas or areas most likely to contain the hazardous constituents of concern or pollutants.

A7.1.3 Completeness

The completeness of the project will be assessed by comparing the number of sample results to the number of samples submitted for analysis. The completeness goal is 100 percent. Should the completeness goal not be met, the project manager will determine if additional sample collection is needed.

A7.1.4 Comparability

Comparability will be addressed by collecting, analyzing, and reporting the data as described in this document. It is anticipated that standard methods or EPA methods will be implemented. Analytical results for TCLP analysis should be reported in milligrams per liter (mg/L), the results for total analyses should be reported in milligrams per kilograms (mg/Kg) or micrograms per liter (ug/L), as appropriate.

A8. SPECIAL TRAINING REQUIREMENTS/CERTIFICATION

A8.1 Personnel

Prior to conducting this sampling activity, each inspector will have completed at a minimum the following training:

- a. Hazardous Waste Operations (HAZWOPER) (40 hours).
- b. RCRA Program Training.
 1. Inspector Orientation (10 hours).
 2. Regulatory Framework (40 hours).
 3. RCRA Compliance Evaluation Inspections; 100 hours (30 hours must be on-the-job training with an experienced inspector), and at least two of these inspections must be at treatment, storage and disposal facilities.
- c. Participation in at least two (2) sampling activities conducted by an experienced inspector.

- d. Annual 8-hour OSHA Health and Safety Refresher Training.
- e. CPR certification.

In addition, each inspector will be provided with (or provided access to) the following reference materials:

- a. EPA Region 7 Standard Operating Procedures.
- b. EPA inspection guidance manuals.
- c. Current edition of 40 CFR (260-299).
- d. State Hazardous Waste Regulations.
- e. Hazardous materials reference literature.
- f. SW-846.
- g. Historical collection of rule changes (from 1980).
- h. EPA Standard Safety Operating Guides.

All project managers and assistants will have equivalent safety and sampling training.

A9. DOCUMENTATION AND RECORDS

This information is covered by the current versions of EPA R7 SOP Nos. 2410.01 “Analytical Data Management Procedures” and 2410.10 “Analytical Data Submission Package Contents & Review.” RCRA non-laboratory project records are maintained at the EPA Regional Records Center (RRC). It is the responsibility of the Records Information Manager at the RRC to maintain these records. At present time, RCRA non-laboratory project records are maintained according to EPA records retention and disposition schedule. The RCRA Inspector will disseminate copies of the QAPP to the people listed in the distribution list (see Section A3) once it is approved. Any revisions to the QAPP will be numbered sequentially. It will be the responsibility of the EPA project manager to see that each person on the distribution list receives copies of any revisions.

B1. SAMPLING PROCESS DESIGN

B1.1 Health and Safety

The project leader and assistants must ensure that the sampling can be performed in accordance with accepted safety procedures. They should refer to the Health and Safety section of the applicable sampling SOP for unit or method specific guidance and to EPA PB92-963414, “Standard Operating Safety Guides,” for additional guidance. In the event that the project leader and assistants have any reservations as to the safety of the sampling operations, no sampling will occur under this plan.

The primary safety hazards during this sampling activity will be from physical hazards, such as cuts from the primary waste, crushed glass, and possibly TCLP heavy metals (lead) dust. A safety survey will be conducted before any samples are collected (Appendix E). At the project leader’s and assistants’ judgement, taking into account the weather, the surrounding conditions, the facility’s safety requirements, and the physical state of the waste streams, the project leader and assistants will determine the appropriate personal protective equipment (PPE) to be worn during the sampling event. Level D is expected to be worn. Level D clothing includes Tyvek gear, safety shoes, hard hat, safety glasses, and gloves.

B1.2 Samples

B1.2.1 Waste Streams in Drums and/or other open containers

It is expected that waste streams of interest, primarily crushed glass, will be generated and accumulated in drums or other open containers on-site (containers). The facility representatives are expected to have at a minimum, knowledge of how these waste streams were generated and what they consist of. Also, previous inspections have identified no risk of organics at the site. Therefore, no field monitoring instruments (i.e., organic vapor analyzers) will be used to screen the containers. The containers selected for sampling will be randomly selected based on the inspectors' criteria from the drums most likely to contain hazardous waste based on visual observations and/or based on process information (i.e., how and when it was generated, process changes, etc.) received by the facility representative during the inspection. Also, the containers selected for sampling are expected to be safely accessible and already open or the facility representatives are expected to open the selected containers. Therefore, no drum opening or moving equipment will be used.

The total number of container samples will be no more than six (6).

B1.2.2 Solid Waste Stream Spills and Piles

It is expected that crushed glass generated at Facility A and possibly Facility C may be accumulated in distinctive waste piles at Facility B. Each pile is expected to contain crushed glass, but the consistency of that glass is unknown. Samples will be collected from the distinctive waste piles that are safely accessible and selected by the inspectors based on information provided by facility representatives during the inspection. For each distinctive pile selected, the sample will consist of one (1) composite sample of up to five (5) to 10 aliquots depending on size of the pile. The aliquots locations will be randomly selected based on the inspectors' criteria from the areas most likely to contain hazardous waste based on visual observations and/or based on process information received by the facility representative during the inspection.

If there are no distinctive piles (i.e., various waste placed into one large pile or impossible to determine what wastes are in which pile), then samples will be collected from the indistinctive waste piles that are safely accessible and selected by the inspectors. For each indistinctive pile selected, the sample will consist of up to three (3) grab samples depending on pile sizes. The grab sample locations will be randomly selected by the inspectors from the areas most likely to contain hazardous waste based on visual observations and/or based on process information received from the facility representative during the inspection.

The total number of waste stream pile samples will be no more than two (2).

B1.2.3 Soil

Surface soil grab samples may also be collected from processing/operating areas, areas under solid waste spills, or visibly contaminated areas. The areas selected for sampling may also consist of surface soil samples collected from an area up to about 10 feet (in the direction of drainage flow) from waste piles, based on visible drainage paths observed. The number of samples collected from each selected area will consist of up to two (2) grab samples depending on size of the area.

The sample locations will be randomly selected based on the inspectors' criteria from the areas most likely to contain hazardous waste based on visual observations and/or based on process information received by the facility representative during the inspection. If no area is vacant or safely reachable, then the grab samples will be collected from randomly selected areas that are safely reachable and based on the inspectors' criteria from the areas most likely to contain hazardous waste based on visual observations and/or based on process information received from the facility representative during the inspection.

For this project, surface soil is defined as the top 0-2 inches of soil. The total number of surface soil samples selected for sampling will be up to three (3).

B1.2.4 Background Soil

One (1) surface soil background sample will be collected from an unaffected area on each site (Facility A, B, and C) where a soil sample is collected. If an unaffected area cannot be located on-site, a background sample will be collected from an unaffected area off-site. The total number of surface soil background samples will be up to three (3).

B1.3 Waste Generated During Sampling

If any hazardous or potentially hazardous waste is generated from these sampling procedures, it will be left at the site, if possible or double bagged, labeled, and returned to EPA.

B1.4 Additional Design Information

For this project, the inspectors shall complete a more detailed process design on-site, prior to conducting the sampling operations. The more detail process design shall consist of noting sample locations on the site sketch and photographing the sample locations. The inspectors will document any unusual site conditions or potential interferences regarding such. The inspectors shall document the sampling method and sampling equipment. The inspectors will also be responsible for correcting any problems that occur in the field.

The total number of samples expected to be collected and submitted for analysis under this plan, including duplicates is shown in Appendix D.

B2. SAMPLING METHODS REQUIREMENTS

EPA will collect waste samples according to the rationale presented in Section B1 above. Samples will be collected in accordance with EPA R7 ENST SOPs. The EPA R7 SOPs applicable to sampling that may be conducted during the project include:

- SOP No. 2420.04 - Field Chain of Custody for Environmental Samples
- SOP No. 2420.05 - Identification, Documentation and Tracking of Samples
- SOP No. 2420.06 - Sample Container Selection, Preservation and Holding Times
- SOP No. 4231.2009 (ERT #2009) - Drum Sampling

- SOP No. 4231.2017 (ERT #2017) - Waste Pile Sampling
- SOP No. 4231.2012 (ERT #2012) - Soil Sampling
- SOP No. 4232.2016 - Sediment Sampling

B2.1 Sampling

Drum Waste: Wastes of interest will consist of solids. They are expected to be accumulated in drums and/or 225-275 gallon plastic or cardboard containers. Therefore, the samples will be collected by following R7 ENST SOP No. 2231.2009 (ERT #2009) - Drum Sampling. EPA will collect the sample as discussed in Section B1 above. Samples will be collected using a stainless steel spoons, stainless steel shovels, and/or stainless steel hand shovels (trowels). A sample may also be collected by filling the sample container directly, or by filling the sample container by using a second decontaminated container. Samples will be homogenized in aluminum pie pans and placed into appropriately labeled 8 oz. glass sample containers. If any of the wastes consist of large pieces, the larger pieces will be broken with a stainless steel spoon or shovel prior to placement in the sample container. The samples will be collected from the top 0-6 inches of the container.

Waste Piles: The waste samples will be collected as discussed in Section B1 above in accordance with EPA R7 SOP No. 4231.2017 (ERT #2017) “Waste Pile Sampling” (the section addressing the collection of surface portion samples). Dedicated stainless steel spoons, shovels, and/or hand shovels will be used to collect the samples. Aliquots for the composite samples will be homogenized in aluminum pie pans and placed into appropriately labeled 8 oz. glass sample containers. The samples will be collected from the top 0-6 inches of the pile. If any of the wastes consist of large pieces, the larger pieces will be broken with a stainless steel spoon or shovel prior to placement in the sample container.

Surface Soils: The surface soil samples (including background sample) will be collected as discussed in Section B1 above in accordance with EPA R7 SOP No. 4231.2012 (ERT #2012) “Soil Sampling” (the section addressing the collection of surface soil samples). Stainless steel spoons, shovels, and/or hand shovels will be used to remove waste from the soil prior to sampling. Dedicated stainless steel spoons will be used to collect the samples. Aliquots for the composite samples will be homogenized in aluminum pie pans prior to placement in the sample containers. The samples will be collected from the top 0-2 inches of the soil.

Sediment Samples: Sediment grab samples will be collected as discussed in Section B1 above in accordance with EPA R7 SOP No. 4232.2016 “Sediment Sampling” (the section addressing use of stainless steel spoons, i.e., scoops) where attainable. If not attainable, then a grab sample will be randomly collected from the area that is attainable.

B2.2 Additional Requirements

Sampling points will be identified in the field notes by their directional distance from landmarks that are likely to be preserved over time. The field observations will be recorded in a bound notebook and/or on the field sheets. Photos of sampling locations will be taken. The time of sample collection, sample location, sample depth, sample section size, number of aliquots, sampling method employed, and sample equipment used will be recorded on field sheets.

The estimated total number of samples expected to be collected during the sampling project is 14. This number includes 13 solid samples and one (1) duplicate. Due to variables that may be encountered in the field (e.g., no standing puddles and/or piles selected for sampling, liquid wastes consist of aqueous solutions, or no equipment is decontaminated), the number of sample matrixes within a sample type may be increased or decreased as needed based on the inspectors' information at the time of sampling.

B3. SAMPLE HANDLING AND CUSTODY REQUIREMENTS

Sample containers, preservation, and holding times will be those found in R7 ENST SOP No. 2420.06, "Sample Container Selection, Preservation, and Holding Times." The samples will be conveyed to the ENST lab in ice chests on ice.

Chain-of-custody and field documentation will be in accordance with R7 ENST SOP No. 2420.04, "Field Chain-of-Custody for Environmental Samples" and R7 ENST SOP No. 2420.05 "Identification, Documentation, and Tracking of Samples," respectively. The time of collection, location, sample section size, number of aliquots, the sample depth, will be recorded on field sheets.

B4. ANALYTICAL METHODS REQUIREMENTS

The samples will be analyzed by the EPA Laboratory in accordance with the methods and levels of interest listed in Appendix D. Routine laboratory turnaround is requested for this project.

B5. QUALITY CONTROL REQUIREMENTS

Duplicate Samples: Duplicates will be collected during this sampling in accordance with the R7 ENST SOPs listed in Section B2.1. The duplicate samples will be utilized to assess variance of the total method including sampling and analysis. At least one duplicate per media (solid waste, liquid waste, soil, and water) will be collected in accordance with the R7 ENST SOPs listed in Section B2.1. If more than 20 samples are collected of a media, additional duplicate samples will be collected at a rate of one duplicate sample per twenty samples for each media. The duplicates will be collected as a split sample for all analyses. As stated in Section A7.1.1, the duplicates will be evaluated using percent relative standard deviation (%RSD). It is calculated as $\%RSD = 2(RANGE) / \{[SQRT(2)] \times (SUM)\} \times 100$.

Rinsate Samples: Dedicated sampling equipment will be used whenever possible. When it is not possible, field equipment should be cleaned according to R7 SOP 4231.2006 (ERT #2006) "Sampling Equipment Decontamination." When cleaning field equipment is required, a piece of the field-cleaned equipment will be selected for collection of a rinse blank. After the selected piece of equipment has been cleaned, and prior to its being used for sampling, it will be rinsed with deionized (organic/analyte free) water. The rinsate will be collected in the sample container. One rinsate blank per day per type of sampling device cleaned will be collected.

Field Blanks: For each parameter requiring a preservative, the sampler prepares a field (preservative) blank and adds preservative to the blank in the field as though it were a regular sample. If a target parameter is detected in the field blank at a concentration of one-tenth, or more, than the concentration found in a sample, the sample is rejected for that parameter. If the target parameter is detected in the field blank at a concentration of less than a tenth of that found in a sample, the sample value is used as is. The sampler does not subtract the field blank value from the sample value.

Split Samples: Split samples will be offered to the facility representative and provided by EPA if requested.

PE Sample: No PE samples are planned for this project.

Laboratory quality control elements: Laboratory quality control elements, including spikes and blanks, will be performed in accordance with the above-referenced analytical SOP and EPA Region 7 SOP No. 2430.12 “Regional Laboratory Quality Control Policy.”

B6. INSTRUMENT/EQUIPMENT TESTING, INSPECTION, AND MAINTENANCE REQUIREMENTS

For the field instrumentation, the testing, inspection, and maintenance will be performed in accordance with the manufacturer’s recommendations.

For the analytical instrumentation, the testing, inspection, and maintenance will be performed in accordance with the above-referenced analytical SOP and manufacturers recommendations.

B7. INSTRUMENT CALIBRATION AND FREQUENCY

For the field instrumentation, the calibration will be performed in accordance with the above referenced manufacturer’s recommendations and R7 ENST SOP No. 2333.01 “Field Equipment Calibration and Maintenance.”

For the analytical instrumentation, the calibration will be performed in accordance with the above-referenced analytical SOP and manufacturers recommendations.

B8. INSPECTION/ACCEPTANCE REQUIREMENTS FOR SUPPLIES AND CONSUMABLES

The Project Manager and Project Assistants will be responsible for inspecting sample containers before leaving for the field. Only new sample containers accompanied by the manufacturer’s certification of pre-cleaning will be used. The sample containers will also be inspected for cracks, ill-fitting lids, and other obvious defects before use and will be discarded if defects are found to be present.

B9. DATA ACQUISITION REQUIREMENTS FOR NON-DIRECT MEASUREMENTS

No data will be used from other sources.

B10. DATA MANAGEMENT

Data management will be in accordance with R7 ENST SOP No. 2410.01 “Analytical Data Management Procedures.” The sampling data will be analyzed (including compared as discussed in this QAPP) by the EPA project manager and included in the sampling inspection report.

C1. ASSESSMENTS AND RESPONSE ACTIONS

Assessments and response concerning the analytical aspect of the project are addressed in the R7 ENST SOP No. 2430.12. The information covers examples of conditions indicating out-of-control situations, who is responsible for initiating the corrective actions, and what steps may be taken.

Due to the limited duration of each sampling project, no field assessment is planned for this activity due to the short time period of each project.

C2. REPORTS TO MANAGEMENT

Once the project is complete and the resulting data obtained, the EPA project manager will prepare a final sampling inspection report. The report will include a summary of the EPA sampling activities performed during the project and the resulting EPA data (along with any statements about problems concerning data quality).

D1. DATA REVIEW, VALIDATION, AND VERIFICATION REQUIREMENTS

The data will be peer reviewed by a qualified analyst and the lab manager as identified in EPA R7 SOP Nos. 2430.12. The EPA project manager will be responsible for overall validation and final approval of the data in accordance with project purpose and use of the data.

D2. DATA VALIDATION AND VERIFICATION METHODS

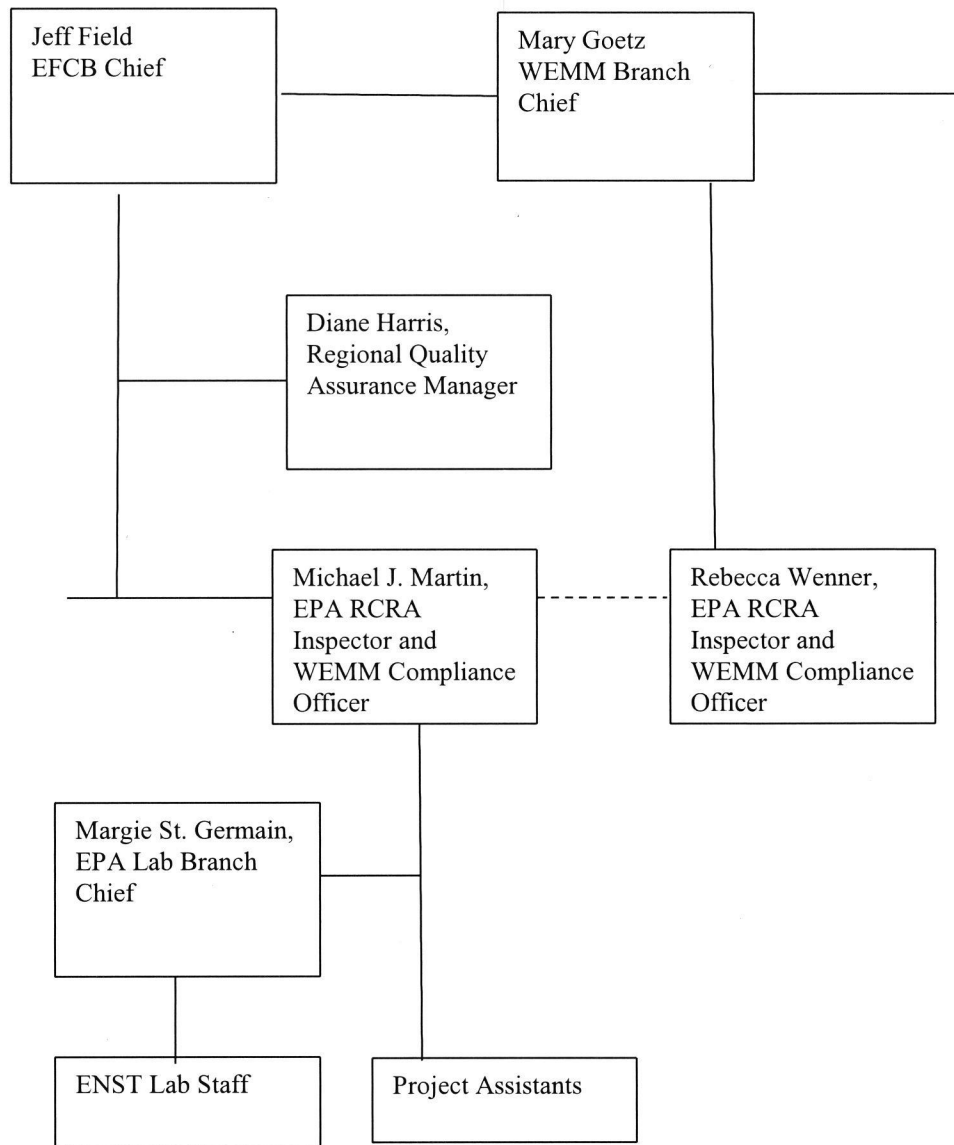
The data will be validated in accordance with R7 ENST SOP Nos. 2430.12. QC spot checks will be performed by the R7 laboratory following the frequency and criteria outlined in EPA R7 SOP No. 2430.06, "Periodic Internal Program Review of the Region 7 Laboratory."

The EPA project manager will perform the final review and approval of the data prior to it being entered into the LIMS system as valid. The EPA project manager will look at field duplicates and rinsate blanks to ensure they are acceptable. The acceptance limit for the precision assessed via field duplicate samples will be less than or equal to 50 percent relative standard deviation. If a target parameter is detected in the field blank at a concentration of one-tenth, or more, than the concentration found in a sample, the sample is rejected for that parameter. If the target parameter is detected in the field blank at a concentration of less than a tenth of that found in a sample, the sample value is used as is. The sampler does not subtract the field blank value from the sample value. The sampler also notes the positive blank under FINDINGS in his or her report. The EPA project manager will also compare the sample descriptions with the field sheets for consistency and will ensure that any anomalies in the data are appropriately documented.

D3. RECONCILIATION WITH USER REQUIREMENTS

Once the data results are compiled, the EPA project manager will review the EPA field duplicates to determine if they fall within the acceptance limits as defined in this QAPP. Completeness will also be evaluated to determine if the completeness goal for this project has been met. If data quality indicators do not meet the project's requirements as outlined in this QAPP, then the data may be discarded and re-sampling may occur. The EPA project manager will evaluate the cause of the failure (if possible) and make the decision to discard the data and re-sample. If the failure is tied to the analysis, calibration and maintenance techniques will be reassessed as identified by the appropriate lab personnel.

Appendix A - PROJECT ORGANIZATION CHART



APPENDIX B - FACILITY LAYOUT

Facility A - Recycletronics
3313 Northbrook Drive
Sioux City, IA
(From 5/23/2016 CEI)



Facility B - Lin-Du LLC
2301 G Street
South Sioux City, NE
(From Google Earth)



Facility C - Recycltronics
1230 Steuben Street
Sioux City, IA
(From Google Earth)



APPENDIX C - EQUIPMENT LIST (as applicable)

Part of the equipment list is stated in the referenced ERTs and a more detailed list will be developed prior to mobilization after the ASR has been submitted and accepted by the ENST Lab.

Safety Equipment to include:

- Tyvek Gear
- Protective Gloves
- Steel Toe Boots
- Safety Glasses
- Hard Hat

Sampling Equipment:

- 1 -Stainless Steel Shovel and/or Hand Shovel (Trowel)
- 25 -Stainless Steel Spoons
- 35 -8-oz. Glass Jars with Teflon lids
- 35 - Plastic bags to put sample jars
- 10 -Aluminum Pans
- 2 -Ice Chests
- 2 -Scissors
- 1 Roll -Large Clear Tape
- 1 Roll -Duct Tape
- 1 Roll -Strapping Tape
- 4 -Custody Seals
- 3 -Large Plastic Bags (for each ice chest and trash)
- 4 -Chain-of-Custody Forms (With Protective Plastic Bag)
 - Ice - Enough to fill coolers
 - Foam - Enough to wrap glass jars
 - Distilled Water
 - Deionized Water (organic/analyte free)
 - Alconox Soap
 - Paper Towels
 - Camera
 - Measuring Tape (50 Ft)
 - Field Sheets and Tags
 - Waterproof Marker
 - Field Bound Notebook

APPENDIX D - SAMPLE SUMMARY TABLE FOR FACILITIES A, B, AND C
(Subject to change after ASR submitted to ENST Lab, which will be documented in the inspection report;)

Location and Type of Sample	Sample Matrix	Estimated Number of Samples	Container Type	Preservation Method	Constituents of Interest	Analytical Method (SW-846)	Levels of Interest
Solid (Waste from drums, piles; Soils from process area, spill areas and background; and/or Sediment from pools/ditches)	- Solids - Crushed Glass - Other solid wastes	Up to 14 Includes 1 duplicate	1-8 oz. jar	Cool to 4°C	Total Metals (including Hg) and TCLP Metals	6010, 7471, and 1311	- Method Detection Limit (MDL) - regulatory threshold found at 40 CFR 261 Subpart C

APPENDIX E - SITE SAFETY CHECK OFF LIST

Site Safety Check Off List

Before Sampling Activity

1. Activity Number _____
2. Name(s) of EPA Personnel _____
3. Facility Name _____ City _____ State _____
Address _____
4. Activity Description: ☐ Facility Inspection ☐ Site Evaluation
Sampling -- ☐ Air ☐ Water ☐ Drum ☐ Soil ☐ Waste Piles ☐ Residential ☐ Other
5. Site Topography: ☐ Mountains ☐ Rivers ☐ Valley ☐ Hill ☐ Level
☐ Rural ☐ Urban ☐ Suburban
6. Incident Safety Plan: ☐ Region ☐ ERT ☐ Facility ☐ Not Developed
☐ Reviewed ☐ Briefed
Note if the plan is reviewed/briefed on site: _____
Site Accessibility: ☐ Good ☐ Poor ☐ Fair
7. Suspected Chemical(s) and pathway with source(s) involved
(A) _____
(B) _____
(C) _____
(D) _____
8. Emergency Numbers, Locations and Estimated Time for Response to Arrive
A. Fire _____
B. Police _____
C. Ambulance _____
9. Is a communication device to summon emergency response readily available at the site?
☐ Yes ☐ No

10. Is an eye wash available? ☐ Yes ☐ No
(Note that one should be carried with the inspector)
11. ~~Is~~ the estimated time for the arrival of emergency response ~~greater~~ 20 minutes?
☐ Yes ☐ No
12. If any or all of the responses to 9, 10, or 11 above are No, sampling will not occur under this QAPP.
13. Is Emergency Response Present on Site for First Aid? ☐ Yes ☐ No

14. Protective Level(s) Selected A B C D

If level "C" Identify Filter Cartridge(s) _____

If level "D" Justify, _____

Check Equipment Utilized

- ☐ Steel Toe Boots ☐ Tyvek Suit ☐ Tyvek Boot Covers ☐ Safety Glasses/goggles
☐ Hearing Protection ☐ Hard Hat ☐ Protective Gloves ☐ Respirator

15. Do any sample locations require entry to areas identified as confined spaces (permitted or unpermitted) by the facility?

Do any of the sample locations confined space entry in the judgement of the project leader?

If Yes, sampling will not be performed under at these locations under this plan.

16. Do any of the sample locations require lockout, tagout in order to safely perform the sampling activities?

If Yes, sampling will not be performed under at these locations under this plan.

17. The inspector is referred to page 152 and 153 of the Standard Operating Safety Guidelines, for a list of agents that have specific guidelines. The inspector is should be aware that OSHA Standards for sampling, PPE, and record keeping, exist for these agents under certain conditions and/or at certain types of facilities. Asbestos, lead, benzene, inorganic arsenic, and vinyl chloride, formaldehyde, and ethylene oxide are among the more the more commonly encountered. The inspector is referred to the 29 CFR 1910.1000 Subpart Z, Toxic and Hazardous Substances for additional guidance.

After Sampling

14. Protective Level(s) Selected: ☐ Same as above ☐ A ☐ B ☐ C ☐ D

If level "C" Identify Filter Cartridge(s) _____

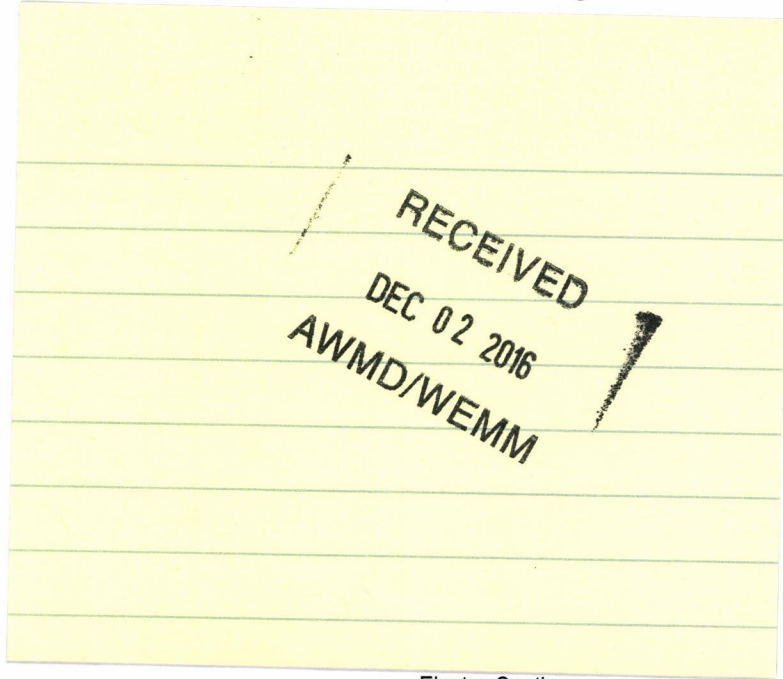
If level "D" Justify, _____

15. List possible chemical exposures

☐ Same as above

- A. _____
B. _____
C. _____
D. _____

16. Approximate duration(s) of the exposure(s). _____

ROUTING AND TRANSMITTAL SLIP				Date: 11/15/16	
TO: (Name, office symbol, room number, building, Agency/Post)				Initials	Date
1. Wenner/AWMD/WEMM				<i>W</i>	11/15/2016
2. Martin/AWMD/WEMM				<i>WJM</i>	11/16/2016
3. Goetz/AWMD/WEMM				<i>WLG</i>	16 Nov 16
4. Harris/ENST				<i>DEH</i>	11/28/16
5.					
6.					
	Action		File		Note and Return
X	Approval		For Clearance		Per Conversation
	As Requested		For Correction		Prepare Reply
	Circulate		For Your Information		See Me
	Comment		Investigate	X	Signature
	Coordination		Justify		
REMARKS					
<p>Attached please find final QAPP and Sampling Plan for Recycletronics in Sioux City, IA and Lin-Du in South Sioux City, NE. Please review and sign. Return to me.</p> <div style="text-align: center;">  <p>Electro-Coating</p> </div>					
FROM: (Name, org. symbol, Agency/Post)				Room No. – Building	
Rebecca Wenner AWMD/WEMM				2.3 P27	
				Phone No. 7644	